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Notes on the Architecture of Living Documents

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Acknowledgements

Documents, Genre and Document Systems

Documents are physical missiles from the past. A document was always created at some other time, a time not now. A document exists in our three dimensional physical space though it is the result of, and a capturing of, a temporal activity. Your child dancing at a party on video tape; the writing a reminder on a Post-it note; the tedious construction of HTML code for your home page.

A document must be performed to re-enter the vast river of sense – sound, shape, smell, touch, taste- that surrounds us, and embeds us, at all times. This performance can be by a human (say, reading a book); by a machine (a dacking movie projector); or lately by a computer (a raucous video game). Performances of the same document may vary. The performance of a document is by no means the same as the replaying of the captured activity. What the novelist did for two years while writing the book is not what the reader experiences. The replayed phone message is not your mother talking.

Many people assume that there is a dialectic or continuum between communication and documents. Some might even say a document is a piece of frozen communication that continues on its way when thawed by performance. O• that a document is just the name for part of a very mediated, very slow, communication stream. But in my taxonomy, while documents and communication are related by *co*-evolution in innumerable wa'fl, they are different amrnals. There is communication without documents and documents without commun,cat,on. When I speak to you on the phone that is communication without documentation; if you secretly record the conversation, the recording is a document but is not necessarily a communication to the lawyer who listens to it three months later. If during a conversation you draw an explanatory floor plan on a napkin, the napkin-document does becomes pan of the communication. Finding someone else's napkin-document, while intriguing, is not usually communiGJtion. The performance of a document is not necessarily communication and despite the ubiquity of video cameras and microphones, all communication does not. at the moment any way, produce a document.

A document is produced by the modulation of a medium that has stability over time. Though this stable media must stay reasonably unchanged over days or eons, we usually pick fairly easily alterable media to modulate: things such as small magnets on a spinning hard drive; ink on a piece of paper er colored water on a canvas. Why waste energy? But those crazy humans have been known to modulate even the rock on the side of a mountain into a document of their leader's faces. Given the vast snowstorm of documents and media we live in, we might *say* that just about everything has been tried, and most anything works.

A document is alwar.; within a genre Genre is a fully nestable concept A novel is a genre of printed *matter;* a mystery is a genre of novel; a murder mystery is a genre of mystery; and so on. A single genre, say a newspaper, is usually composed of multiple genres. The sports section and the comics are both themselves genres. The title of a news story is a genre with its own aesthetic, separate from the news story genre itself. While many genres have written rule books (another genre), most genre are defined by what Wittgenstein would call a doud of features. Though there are many differences, I GJn usually tell what are headlines even in a Japanese newspaper It is perhaps amazing that one can say something like "I like rock music" or "I don't like country western music; and mean something by it. Genre defines social existence and tribal boundaries in uncounted ways.

Genre is critical in document construction. It organizes thought and activity: how you write and think about a poem is different than how you write and think about a novel or a screen play. A genre creates a tool system around it, which is economically feasible due to eronornles of scale. The instruments of a rock band are different than the instruments of an orchestra. Esoteric knowledge develops around the construction of documents. There are people who know the differences between AutoCad

13.0 and AutoCad 14.0, just as previous generations knew the difference between a #2 and a #4 pencil. Genre allows jazz musicians who have never met to play together. It allows you to sit down at just about any computer in America and pound out PowerPoint slides. Genre gives one a fair idea of how a document will be performed. When you master a CD, you expect that it will be played on a CD player. This is important, for genre also sets up desire. People want to write novels because people read novels, want to make rock music because people listen to rock music, want to draw house plans because people build houses.

Genre gives structure to a document so that when you read the funnies, you know that the whole newspaper is not the funnies. Genre allows us to concentrate and make sense of the parts of a document by understanding their tacit relationship to the whole. Genre also specifies systems of understanding which are held in common by document constructor and consumer. These can be as specific as the English language or the architectural symbol for a double-Dutch door. They can also be as general as what a "rut" means in a feature movie.

Genre sets up interesting patterns of commerce which allow everything from bookstores, to movie theaters, to printing plants, to the world wide web, to rock dubs, to accounting programs, to video tape machines, to video game stores, to architect's offices to exist and thrive.

While much attention is given to document consumption (this is supposedly the age of content after all), document construction is probably more important hrs dunng the construction process (often very long compared to the document consumption process wrth ranos reaching thousands to one) where ideas are formed, where thoughts are produced, where invention is created. One does not preform all of ones ideas and then sit down at PowerPoint or AutoCad and simply plop them from brain to paper. More often, multiple people, in repeated, long iterative sessions, create consensus as the document is produced. Document construction is often the moment of community formation and understanding. It is war and peace by other means.

In the end the document is "Other" in the Hegelian sense. When an author finishes a book, that book is said to acquire a life of its own. When an architect finishes a floor plan the blueprint forms its own relationship with Allah. One has a hard time to impossible time controlling a document once constructed. The perfomnance of a document and the meaning of that perfomnance is not owned by the document creator no matter what Disney *sar.;* on their video tapes. Not only is the perfomnance other to the document creator, the performance is other to the document itself. Even in such interesting document types as memorized poems (which most were at one time) the poem is other to the brain which memorized it and it is different from the memory of a reading or a hearing of the poem. This otherness of the documents that surround us create a shadow world in which we slide.

Documents exist within genre, which might be thought of as large extended families of documents, further most documents exists within heterogeneous "document systems. The relationships between the varying documents in these systems are surprisingly regular. In an architect's office, for instance, there will be systems of documents composed of the original written specification by the dient, rough pencil sketches, an AutoCad file, a backup of the AutoCad file, a printout or two oft he floor plans, a hand drawn elevation of the house, a spread sheet of the cost of materials, a photocopy of that same spreadsheet, a Post-it note with the telephone number of the client, an invoice, a cancelled check and perhaps a photo of the finished house. These documents as a whole constitute the document system. Each of these documents is related to the other documents in the system in known war.;. In well rehearsed and schooled methods each of these documents was used during the document construction processes to create the other documents in the system.

Wet, Damp, and Dry Document Systems

In the modem office most spaces are designed for both document construction and document consumption. The denizens of the office, lately referred to by that peculiar word "knowledge worker; do not just shovel knowledge from here to there (though that might be management's ultimate desire), but construct new knowledge by constructing new documents whrch almost alwar.; requires the consuming of vast buckets of existing documents. Document consumption and construction, particularly in the corporate environment, are highly ntualized social acts. Different ntuals require different kinds of spaces. On a continuum one can define three kinds of spaces designed for document construction and consumption. These spaces GJn be called ·wet,""dry,"and "damp" spaces.

An example of a wet space might be an auditorium, a conference room or even a crowded office where the participants are sitting together and can smell each other's breath, GJn feel the sweat on each other's brow, can physiGJlly bump into each other's suits and touch each other's suits. Performed documents in a wet space are things like PowerPoint slides, presentations, videos, agendas, handouts, overheads and the like. But several kinds of Document construction also take place in a wet spaces. In large wet spaces minutes are taken by a secretary, notes are scribbled into notebooks, sketches are produced on envelope backs, lists are produced on white boards and these lists are typed into laptops. In small wet spaces, say two or three people huddled around a computer screen, we find partially completed documents being edited, word-smithed, re-drawn and re-worked. These small, wet

meetings, usually held under threat of deadline, probably come closest in our culture to the Vulcan mind-meld

A dry space is your office after you have dosed your door, turned off your phone, dosed your email icon and stopped the transmission of your shared video link. You are alone with your books, your documents and your unconnected computer It is a moment when many workers say something like, "Now I can get some work done," meaning, of course, now they can consume, but mostly construct, documents. It is in these dry spaces, away from other humans, that the detailed fabric of complex documents gets put together. You draw the new floor plans, you create your next presentation, you type in your trip report, you run the heating and cooling numbers, you pour over tables to determme what materials you will use There is also a kind of trust or ownership which is built between the worker and his or her document in such spaces. a bonding between the human and the otherness of modulated media.

A damp space is a space where there is only the mediated presence of other humans. These days this mediation comes in many fonms: remote video, email, telephones, chat rooms, shared documents, conference calls and immersive 3-D displays containing stiff little agents. While there were a few damp spaces before the electronic era, they were few and scattered. The invention of the telegraph, telephone, radio, TV. computer and so on changed the world such that we *seem* to now *live* in a continuous damp space punctuated only by dreaded wet meetings and rare dry momentsalone in the office. Where once dampness was used to mitigate the problems of distance, it is now often preferred, even when wetness is possible."! dorrt have to smell his dirty socks," says a remote video collaborator who is separated from his partner by an easily removable wall, but connected by $15,000 dollars of video equipment. Damp spaces tum out to be much like prophylactics: they allow a certain kind of human interaction that would be too dangerous to engage m otherwise. Because of these properties, damp spaces tum out to be hothouses of document construction if for no other reason than it is possible to tum most damp communications into documents *by just* hitting the "record" button.

Documents migrate between wet, damp, and dry spaces in complex, interesting, and often fonmalized, patterns. The PowerPoint presentation given in the wet space was constructed laboriously in a dry space. The notes that some one took during the meeting, based on the slides, were later typed into a computer and sent out as email on the dl, a damp space, where they were altered and corrected by the entire group in both wet office meetings and dampish phone calls. These damp notes eventually were pulled into another dry space, where they were worked into another presentation for next week's wet meeting.

There is nothing more disconcerting in the office environment than having document behaviors designed for one kind of space being in-acted in the wrong kind of space. Reading your e-mail at a meeting rs just as irritating as the speaker phone in the middle of the table during a very wet argument. Such *faux pas* lay the groundwork for future taboos.

Living Oacuments

Within the ever growing damp spaces of the world a new kind of document is arising, from the ooze as it were. It is a document that while always finished, is also always in flux. It is a document that is simultaneously being constructed *by* a society of people, even while it is being consumed by that same, or related, society of people. To these people it is the weekly, daily, hourly changes in the document that matter, though it is the constancy that draws them to it. Because of this constant and continuous shifting the document seems to take on vital signs, it seems to have *a* life of its own, but its life is actually a reflection of the community it finds itself within. One can call this kind of document, a 'Living Document'.

A Living Document rs not an interactive document, which rs simply a document which can perfonmed differently depending on user input. Nor is it just a collection of smaller documents, much as a library is a collection of books. A Living Document has a wholeness about it which allows the parts to be read, and understood, meaningfully as one. While Living Documents are related to document systems, they are not simply document systems. A Living Document's parts, its sub-genres, are related in the way that my body parts are related, or the buildings of a city are related: the yare related by identity. And while the dynamism of a Living Document pulls it dose to communication, and a Living Document is often part of a communication system, Living Documents are primarily and fundamentally documents.

Living Documents are documents that are being continually constructed and continually perfonmed, usually by a defined society of people This society, its mores, its habits, its work practices, its routines, its social structures and importantly, its genres, keep the Living Document's construction architecturally sound while under constant renovation. Because the Living Document is in constant flux, it cannot be referred to by content, rather, it is referred to by site much as we refer to Paris by site. If I visit a living Document next week, I do not necessarily see the same thing I saw last week. It is precisely for that reason I might revisit it each morning. I wish to know what my tribe is up to. What I know is where to look. I also know the mythic structure of this site: its history, the people, who have made the site, the stories

about the site. It rs in this way that Living Documents are like cities. Paris is not the same today as II was five hundred years ago. But it is still *Pans. And* I have desires to go to Paris.

One rarely constructs a Living Document from scratch and even then it usually starts out with a selection of recruited documents like so many mobile homes converging on a trailer park. Construction in a Living Document is like building within an eXJsting city. Like cities, Living Documents are structured chaos· some are radial, some are grid-like, some grew up organically along the banks of existing rivers of documents. As one builds in a Living Documentsone finds various zoning laws, enforced either implicitly or explicitly. You can lose your job if you add to a Living Document the wrong way. Like all normal humans, one usually checks to see what the humans near by are doing and does the same sort of thing. Every so often there is redevelopment. Every so often there is a fire. Existing architecture constrains new construction, but also makes it meaningful.

From one day to the next a Living Document will be pretty much the same, yet over time radical shifts can take place. Like both a city and an embryo, the morphogenesis of a Living Document is highly influenced by its current structure; but unlike *an* embryo, but like a city, it is actually fonmed by the community of humans who use It and live with it. The Living Document and the living culture it exists within are symbiotic. They co-evolve in that the Living Document alters the society that builds it.

Many Living Documents have "museums", often called archives, however it is rare when one can actually reconstruct past eras and bye-gone days by shuffling through the dusty corridors. But the past is present in echo fonm, in the city and in a few histoncally preserved document fragments that often stand like marble state buildings at the center. How a Living Document grows from its past often comprises an entire neighborhood of verbage within the Living Document itself. Preservationists scurry about hopmg to capture pictures of the present for they know what all historians know· the past will be used m argument for the future.

A Living Document must be monitored, nurtured, tended, groomed, fed and paid attention to or it dies. To achieve these goals Living Documents tend to be surrounded *by* a hailstorm of smaller documents. These related documents: email notes, newsletters, advertisements, posters, etc. ask people to use the Living Document, to add to it, to look at it, to read it, to alter it, to become engaged with it, to think about, to make it the center of their work-a-day lives. Sometimes it is like having a hungry beast in the office – best to keep it fed.

The construction phase of typical document rs usually highly iterative: add some, erase some, build some, edit some, write some, revise some, re-read, stand back, add a little more, declare it done. It moves from pencil sketch to finished engineering drawing by slow accretion and fine and rough sanding. It moves from preliminary to finished. But a Living Document is always done, is always finished, (though there are occasional moments of renovation when faux "Under (onstrurtiorr'sqns go up). As one consumes the Living Document one is often also constructing it. Adding a comment, a pointer, building a small room, a little storefront. More often than not, however, large pieces are built off-world, out of the city in the suburbs, and shipped in almost completed. Just have to hook up the plumbing Like houses in Milano the doors to these new villas are often small and nearly unnoticed, unstated blue gates in a wall. It is only by gmng through the door that one finds a cocktail party in full swing.

Conclusion

As we speak, almost all Living Documents are maintained, in full or in part, *on* computer systems. Whatever else computers do, computers seem to cause hallucinations in human beings about the nature of the world. They have created a strange belief that there is a "physical" world *and* a different, *yet* parallel, "virtual" world *and* that these two worlds communicate with each other via an "interface." That there is no virtual world, that everything is physical, is obscured by these powerful visions. Like early film goers we are still ducking at projected trains. This mysticism is highly disconcerting and politically dangerous for the vast computational infrastructure we are building, so that we can have 17 inches of flickering light on our desktops, does not lay lightly on the surface of the planet nor is it politically neutral. We can expect in the near future that the cutting of a network T-10 line to carry with it the death penalty. The amount of arms that will be required to maintain this system is yet to be calculated. But in the end, though I am not positive about this, it is this hallucinogenic property of computers *which* makes the kind of document we have been speaking about *seem* to actually breathe.

I would like to end this essay on the architecture of living Documents *by* noting that we are standing at the threshold of an entirely new kind of Living Document, one that will be made possible by a coming tsunami of genetic engineenng. Within a generation, or perhaps two, genetic engineers will be able to call into life human beings with any size brain that is structurally feasible on a planet of our gravity. I think it is reasonably likely that genetic engineering will also allow multiple heads on *a* single human with as yet unknown couplings. These changes will allow us to dedicate entire lobes to functions we now relegate to computer servers currently spinning their disks in our office basements. Living Documents *may* take up residence in living tissue. Given that the human race is currently at about an emotional age of, I'd *say,* four, I find this an unbelievably scary prospect. I much prefer that we continue to play with our highly hallucinogenic computers and their Living Documents.

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